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**TRANSMITTAL OF APPEAL BRIEF (Large Entity)**

*AF*  
Docket No.  
1854

In Re Application Of: **KLETT, D., ET AL**

Serial No.  
10/019,860

Filing Date  
05/07/2002

Examiner  
DINH, T.

Group Art Unit  
2821



Invention: **SPARK PLUG FO AN INTERNAL COMBUSTION ENGINE...**

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on 11/11/2003

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**MICHAEL J. STRIKER**

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Examiner: Dinh, T.

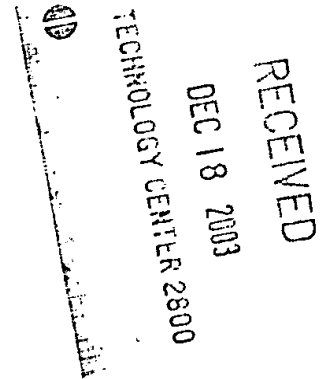
Art Unit: 2821

In re:

Applicant: KLETT, D., et al

Serial No.: 10/019,860

Filed: May 7, 2002



**APPEAL BRIEF**

December 8, 2003

Hon. Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

Sirs:

In response to the Final Rejection of the above-referenced application  
dated July 29, 2003, the Appellants hereby respectfully submit their Appeal Brief:

12/15/2003 DTESSEM1 00000105 194675 10019860  
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### ***(1) Real Party in Interest***

The real party in interest in the present application is the assignee of the application, Robert Bosch, GmbH, Stuttgart, Germany, pursuant to an assignment dated December 6, 2000.

### ***(2) Related Appeals and Interferences***

There are currently no related appeals and interferences which will directly affect or be directly affected by or which have a bearing on the decision in the present appeal.

### ***(3) Status of the Claims***

Claims 1 and 2 stand finally rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,877,584 to Kato. Claims 8-12 have been allowed, and claims 3-7 have been indicated as allowable, if rewritten in independent form.

#### ***(4) Status of Amendments***

The Appellant filed a Request for Reconsideration in response to the Final Office Action dated July 29, 2003, in which an amendment to claim 1 was proposed. This amendment was not entered by the Examiner, however.

#### ***(5) Summary of the Invention***

As discussed on pages 1-2 and the abstract of the disclosure of the present application, the present invention, as defined the appealed claims 1 and 2, relates to a spark plug for an internal combustion engine, which has a middle electrode with an electrode base body 5 with an end face 51 oriented toward the combustion chamber. A precious metal platelet 8 is attached to this end face. An end section 15 of the electrode base body oriented toward the combustion chamber is formed in the shape of a truncated cone. Likewise, the precious metal platelet 8 is formed in the shape of a truncated cone, and the diameter of the end face 51 of the electrode base body oriented toward the combustion chamber corresponds to the diameter of the end face 84 of the precious metal platelet oriented away from the combustion chamber. As defined in appealed claim 2, it is advantageous if the opening angle of the truncated cone-shaped precious metal platelet is smaller than the opening angle of the truncated cone-shaped combustion chamber end section of the

electrode base body, since this minimizes material consumption for the precious metal platelet. At the same time, this minimizes the removal of heat from the volume in which the combustible mixture is to be ignited.

Consequently, the removal of heat from the region in which the combustible mixture is to be ignited is not significantly increased, but an increase in the combustion resistance is achieved. The claimed structure of the present invention has the advantage over known devices, in that it has very favorable ignition properties, since a reduced surface area reduces the amount of heat drawn away from the volume in which the mixture is to be ignited.

#### ***(6) Issues***

Whether claims 1-2 are anticipated by U.S. Patent No. 5,877,584 to Kato.

#### ***(7) Grouping of Claims***

- a) Claims 1-2, which stand or fall together.

#### ***(8) Argument***

The cited patent to Kato describes a spark plug with a middle electrode, which has an electrode base body and a precious metal platelet. The precious metal platelet is connected with the electrode base body by means of a welded connection. Before welding of the electrode base body and the precious metal platelet, the precious metal platelet has a cylindrical shape (see column 4, line 55: disc shaped), while the end section of the electrode base body is formed partially in a truncated cone form. By means of the welding process, a ring-shaped, round welding seam 51 is formed between the electrode base body and the precious metal platelet.

The Examiner refers in the final Office Action to Figure 2 and to column 4, line 50 forward of the Kato reference. In Figure 2, the end facing the combustion chamber has a spark plug. The part of the center electrode 3 arranged to the right of the center axis is shown in a view, such that on the right side, the surface of the center electrode can be seen. The section left of the center axis is shown in section, as shown by hatching. This type of illustration is widespread for illustrating spark plugs.

From Figure 2 of Kato, it can be seen that merely the outer surface of this round welding seam, like the outer surface, is formed as a truncated cone. The round welding seam, however, has no face surface in the sense of claim 1 of the present application. Before the welding process, the precious metal platelet of Kato is cylindrical and after the welding process, the precious metal platelet has a cylindrical section, which tapers to the side facing away from the combustion chamber in the region of the round welding seam.

Also, if one views the round welding seam and the precious metal platelet as a common element, this element does not have the form of a truncated cone. Thus, it must be noted that the outer contour in Figure 2 designated by the Examiner in the Office Action does not correspond to the form of the electrode base body and the precious metal platelet in the interior of the middle electrode, which can also be clearly seen from the sectional representation on the left side of Figure 2. Thus, the Kato reference fails to show a truncated-cone shaped precious metal platelet.

According to claim 1 of the present application, the center electrode has an electrode base body 5 with an end face 51, whereby an end section of the electrode base body has the shape of a truncated cone. A platelet 8 is attached to the end face 51, which, likewise, has the shape of a truncated cone. This arrangement is shown in Figure 2 of the present application, in which it operates as a sectional illustration, as provided in the description.

Again, from Figure 2 of Kato, it can be seen further that merely the outer surface of this round welding seam, like the outer surface of the base body, is formed as a truncated cone. The round welding seam, however, has no face surface in the sense of claim 1 of the present application. Likewise, the precious metal platelet is formed as a truncated cone. Before the welding process, the precious metal platelet is cylindrical and after the welding process, the precious metal platelet has a cylindrical section, which tapers to the side facing away from the combustion chamber in the region of the round welding seam.

As argued previously, in Kato, neither the remaining portion of the precious metal platelet 5 nor the common element formed from the precious metal platelet 51 and the precious metal platelet 5 have the shape of a truncated cone.

Therefore, Kato cannot be viewed as anticipatory of the present invention as defined in claims 1 and 2, according to the standards required to support a rejection under 35 U.S.C. 102. Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. ***Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick, Co.***, 221 USPQ 481, 485 (Fed. Cir. 1984).

It has been held further that a prior art reference anticipates a claim only if the reference discloses, either expressly or inherently, every limitation of the claim. Absence from the reference of any claimed element negates anticipation. ***Row v. Dror***, 42 USPQ 2d 1550, 1553 (Fed. Cir. 1997) (quoting ***Kloster Speedsteel AB v. Crucible, Inc.***, 230 USPQ 81, 84 (Fed. Cir. 1986)).

Thus, because the Kato reference fails to disclose the above-discussed features of rejected claim 1, Kato does not anticipate claims 1 or 2 under Section 102.

For the reasons set forth above, the Appellants respectfully submit that claims 1-2 are patentable over the cited reference Kato.

Therefore, the Appellants respectfully request that the honorable Board of Appeals reverse the final rejection of claims 1-2 under 35 U.S.C. 102 and grant an allowance of these claims.



Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Michael J. Striker', followed by a long horizontal flourish.

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## **(9) Appendix**

Claims on appeal:

1. A spark plug for an internal combustion engine having a combustion chamber, comprising a middle electrode having an electrode base body (5) with an end face (51) oriented toward the combustion chamber, wherein a precious metal platelet (8) is attached to the end face, wherein an end section (15) of the electrode base body oriented toward the combustion chamber is formed in the shape of a truncated cone in said precious metal platelet (8), wherein the previous metal platelet (8) is formed in the shape of a truncated cone and the diameter of the end face (51) of the electrode base body oriented toward the combustion chamber corresponds to a diameter of a planar end face (84) of the precious metal platelet oriented away from the combustion chamber.

2. The spark plug according to claim 1, wherein the opening angle (21) of the truncated cone-shaped end section of the electrode base body oriented toward the combustion chamber is less than or equal to  $180^\circ$  and/or the opening angle (23) of the truncated cone-shaped precious metal platelet is less than or equal to  $90^\circ$  and the opening angle of each opens in the direction oriented away from the combustion chamber.